

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1 **Claim 1 (currently amended):** A location information
2 transmission method for reporting on-road location information
3 on a digital map by an information transmission system,
4 ~~characterized in that comprising the steps of:~~
5 transmitting on-road location information by an information
6 provider ~~reports, as , the~~ on-road location
7 information ~~[[;]] including:~~ a string of coordinates line
8 information representing a road shape of a road section ~~including~~
9 ~~the on-road location~~ having a length determined depending on
10 difficulty of shape matching; additional information including
11 an information item selected from a group consisting of attribute
12 information on ~~[[a]]~~ said road section including ~~said a road~~
13 location of said road section and detailed information on nodes
14 in said road section; ~~and relative information indicating said~~
15 ~~on-road location in said road section, and that~~
16 ~~a party that receives~~ receiving said on-road location
17 information by a portable navigation apparatus; and
18 ~~performs performing~~ shape matching to identify said road
19 section on a digital map of the portable navigation apparatus
20 based on the string of coordinates line information and the
21 additional information ~~and uses said relative data to identify~~
22 ~~the on-road location in said road section.~~

1 **Claim 2 (currently amended):** A location information
2 transmission method according to claim 1, ~~characterized in that~~
3 wherein a string of coordinates where coordinate data indicating
4 the positions of the nodes and interpolation points included in
5 said road section are arranged sequentially is used as said
6 string of coordinate information.

1 **Claim 3 (currently amended):** A location information
2 transmission method according to claim 2, ~~characterized in that~~
3 wherein an interpolation points point that contribute contributes
4 less to shape matching ~~are is omitted out of from the~~
5 interpolation points included in said road section ~~in order to~~
6 ~~generate said string of coordinate information.~~

1 **Claim 4 (currently amended):** A location information
2 transmission method according to claim 3, ~~characterized in that~~
3 wherein an said interpolation point is omitted from said
4 interpolation points where a change in bearing is less than a
5 predetermined angle with respect to bearing from an adjacent
6 interpolation point or node and a distance from said
7 interpolation point or node is less than a predetermined distance
8 ~~in order to generate said string of coordinates information.~~

1 **Claim 5 (currently amended):** A location information
2 transmission method according to claim 2, ~~characterized in that,~~
3 ~~as~~ wherein said string of coordinate information[[,]] comprises
4 coordinate data of a member chosen from a group of nodes
5 and interpolation points included in said road section, the

6 coordinate data being ~~is~~ represented using absolute coordinates
7 and ~~that~~ data of members of nodes and interpolation points
8 excluding said chosen member, the data being ~~is~~ represented using
9 relative coordinates.

1 **Claim 6 (currently amended):** A location information
2 transmission method according to claim 1, ~~characterized in that~~
3 wherein said additional information includes at least one
4 information item chosen from a group consisting of road type
5 code, road number, toll highway code, number of traffic lanes,
6 regulation information, road width, number of connecting links
7 to a crossing node, and connection angle of each connecting link
8 to a crossing node.

1 **Claim 7 (currently amended):** A location information
2 transmission method according to claim 6, ~~characterized in that~~
3 wherein said additional information includes accuracy information
4 on relating to a digital map data used to generate the on-road
5 location information.

1 **Claim 8 (currently amended):** Method for thinning-out a
2 plurality of points representing a road shape by an information
3 transmission system, comprising steps of:

4 providing a string of coordinates defining said plurality
5 of points;

6 determining whether the bearing deviation, d_n , of an
7 interpolation point, P_n , of said string of coordinates from a

8 preceding interpolation point, P_{n-1} , of said string of coordinates
9 is smaller than a predetermined angle, α ;
10 determining whether a distance, g_n , of the interpolation
11 point, P_n , from the preceding interpolation point, P_{n-1} , is ~~short~~
12 shorter than a predetermined length, β ; and
13 omitting the interpolation point, P_n , from the string of
14 coordinates if both $d_n < \alpha$ and $g_n < \beta$ as determined in the determining
15 steps;
16 transmitting the string of coordinates from which the
17 interpolation point, P_n , is omitted from the information
18 transmission system.

1 **Claim 9 (previously presented):** The method of claim 8,
2 further comprising a step of incrementing the value of n by 1 and
3 then repeating the steps of determining and the step of omitting.

1 **Claim 10 (previously presented):** The method of claim 8
2 wherein each of the points is represented using relative
3 information based on one of the plurality of points.

1 **Claim 11 (new):** A location information transmission method
2 according to claim 1, wherein the on-road location information
3 includes relative information indicating an on-road location in
4 said road section, the method further comprising a step of
5 performing identifying the on-road location in the road section
6 using the relative information by the portable navigation
7 apparatus.